

!!! Phased-out product !!! The successor product series is 3SK2 (see FAQ xxxxxxxx) SIRIUS safety relay with relay and electronic 24 V DC, 45 mm Spring-type terminal EC instantaneous: 4 NO EC delayed: 0 SC: 1 monitored start Basic device Maximum achievable PL according to EN 13849-1: Maximum achievable SIL according to IEC 61508: 3



Figure similar

General technical data	
Product brand name	SIRIUS
Product designation	safety relays
Design of the product	double monitored start
Protection class IP of the enclosure	IP20
Protection class IP of the terminal	IP20
Protection against electrical shock	finger-safe
Insulation voltage rated value	300 V
Ambient temperature	
• during storage	-40 ... +80 °C
• during operation	-25 ... +60 °C
Air pressure acc. to SN 31205	90 ... 106 kPa
Relative humidity during operation	10 ... 95 %
Installation altitude at height above sea level maximum	2 000 m
Vibration resistance acc. to IEC 60068-2-6	5 ... 500 Hz: 0,075 mm
Shock resistance	8g / 10 ms and 15g / 5 ms
Surge voltage resistance rated value	4 000 V

<b>EMC emitted interference</b>	IEC 60947-5-1, IEC 60000-4-3, IEC 60000-4-5, IEC 60000-4-6
<b>Installation environment regarding EMC</b>	This product is suitable for Class A environments only. It can cause undesired radio-frequency interference in residential environments. If this is the case, the user must take appropriate measures.
<b>Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750</b>	KT
<b>Reference code acc. to DIN EN 61346-2</b>	F
<b>Number of sensor inputs</b>	2
• 1-channel or 2-channel	
<b>Design of the cascading</b>	cascading or in-service switching
<b>Type of the safety-related wiring of the inputs</b>	single-channel and two-channel
<b>Product feature cross-circuit-proof</b>	Yes
<b>Safety Integrity Level (SIL)</b>	3
• acc. to IEC 61508	
<b>SIL Claim Limit (subsystem) acc. to EN 62061</b>	3
<b>Performance level (PL)</b>	e
• acc. to EN ISO 13849-1	
<b>Category acc. to EN ISO 13849-1</b>	4
<b>Hardware fault tolerance acc. to IEC 61508</b>	1
<b>Safety device type acc. to IEC 61508-2</b>	Type B
<b>PFHD with high demand rate acc. to EN 62061</b>	0.0000000069 1/h
<b>T1 value for proof test interval or service life acc. to IEC 61508</b>	20 y
<b>Number of outputs as contact-affected switching element</b>	
• as NC contact	0
— for signaling function instantaneous contact	
• as NO contact	2
— safety-related instantaneous contact	
— safety-related delayed switching	0
<b>Number of outputs as contact-less semiconductor switching element</b>	
• safety-related	0
— delayed switching	
— instantaneous contact	2
• for signaling function	0
— delayed switching	
— instantaneous contact	1
<b>Stop category acc. to DIN EN 60204-1</b>	0

## General technical data

### Design of input

<ul style="list-style-type: none"> <li>• cascading input/functional switching</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• feedback input</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Start input</li> </ul>	Yes
<b>Type of electrical connection Plug-in socket</b>	Yes
<b>Operating frequency maximum</b>	2 000 1/h
<b>Switching capacity current</b>	
<ul style="list-style-type: none"> <li>• <b>of semiconductor outputs</b> <ul style="list-style-type: none"> <li>— for signaling function at DC-13 at 24 V</li> <li>— for enabling circuit at DC-13 at 24 V</li> </ul> </li> </ul>	0.5 A 1 A
<ul style="list-style-type: none"> <li>• <b>of the NO contacts of the relay outputs at DC-13</b> <ul style="list-style-type: none"> <li>— at 24 V</li> <li>— at 115 V</li> <li>— at 230 V</li> </ul> </li> </ul>	1 A 0.1 A 0.1 A
<ul style="list-style-type: none"> <li>• <b>of the NO contacts of the relay outputs at AC-15</b> <ul style="list-style-type: none"> <li>— at 115 V</li> <li>— at 230 V</li> </ul> </li> </ul>	3 A 3 A
<b>Mechanical service life (switching cycles) typical</b>	100 000
<b>Design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required</b>	gL/gG: 4 A or fast-acting: 4A
<b>DC resistance of the cable maximum</b>	1 000 Ω
<b>Wire length between sensor and electronic evaluation device with Cu 1.5 mm<sup>2</sup> and 150 nF/km maximum</b>	1 000 m
<b>Make time with automatic start</b>	
<ul style="list-style-type: none"> <li>• typical</li> <li>• at DC maximum</li> </ul>	60 ms 100 ms
<b>Make time with monitored start</b>	
<ul style="list-style-type: none"> <li>• maximum</li> <li>• typical</li> </ul>	100 ms 60 ms
<b>Backslide delay time after opening of the safety circuits typical</b>	45 ms
<b>Backslide delay time in the event of power failure</b>	
<ul style="list-style-type: none"> <li>• typical</li> <li>• maximum</li> </ul>	25 ms 30 ms
<b>Recovery time after opening of the safety circuits typical</b>	400 ms
<b>Recovery time after power failure typical</b>	8 000 ms
<b>Pulse duration</b>	
<ul style="list-style-type: none"> <li>• of the sensor input minimum</li> <li>• of the ON pushbutton input minimum</li> <li>• of the cascading input minimum</li> </ul>	45 ms 0.2 s 0.045 s

Control circuit/ Control	
Type of voltage of the control supply voltage	DC
Control supply voltage 1	24 V
<ul style="list-style-type: none"> <li>• at DC rated value</li> </ul>	
Operating range factor control supply voltage rated value of magnet coil	0.85 ... 1.15
<ul style="list-style-type: none"> <li>• at DC</li> </ul>	

Installation/ mounting/ dimensions	
Mounting position	any
Mounting type	screw and snap-on mounting
Width	45 mm
Height	138.5 mm
Depth	88 mm

Connections/Terminals	
Type of electrical connection	spring-loaded terminals
Type of connectable conductor cross-sections	2x (0.25 ... 1.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• solid</li> </ul>	
<ul style="list-style-type: none"> <li>• finely stranded</li> </ul>	
— with core end processing	2 x (0.25 ... 1.5 mm <sup>2</sup> )
— without core end processing	2x (0.25 ... 1.5 mm <sup>2</sup> )
Type of connectable conductor cross-sections at AWG conductors	
<ul style="list-style-type: none"> <li>• solid</li> </ul>	2x (24 ... 16)
<ul style="list-style-type: none"> <li>• stranded</li> </ul>	2x (24 ... 16)

Product Function	
Product function	
<ul style="list-style-type: none"> <li>• Light barrier monitoring</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Standstill monitoring</li> </ul>	No
<ul style="list-style-type: none"> <li>• protective door monitoring</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Automatic start</li> </ul>	No
<ul style="list-style-type: none"> <li>• magnetically operated switch monitoring NC-NO</li> </ul>	No
<ul style="list-style-type: none"> <li>• rotation speed monitoring</li> </ul>	No
<ul style="list-style-type: none"> <li>• laser scanner monitoring</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• monitored start-up</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Light array monitoring</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• magnetically operated switch monitoring NC-NC</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• EMERGENCY OFF function</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Pressure-sensitive mat monitoring</li> </ul>	Yes
Suitability for interaction press control	No

Suitability for use	
• Monitoring of floating sensors	Yes
• Monitoring of non-floating sensors	Yes
• safety switch	Yes
• position switch monitoring	Yes
• EMERGENCY-OFF circuit monitoring	Yes
• valve monitoring	No
• tactile sensor monitoring	Yes
• magnetically operated switch monitoring	Yes
• safety-related circuits	Yes

Certificates/approvals	
<b>Certificate of suitability</b>	UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508
• TÜV (German technical inspectorate) certificate	Yes
• UL approval	Yes
• BG BIA certificate	Yes

General Product Approval	EMC	Functional Safety/Safety of Machinery
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[Type Examination Certificate](#)

Declaration of Conformity	Test Certificates	other
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[Miscellaneous](#)

[Special Test Certificate](#)

[Confirmation](#)

[Environmental Confirmations](#)

### Further information

**Information- and Downloadcenter (Catalogs, Brochures,...)**

<http://www.siemens.com/industrial-controls/catalogs>

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3TK2845-2DB40>

**Cax online generator**

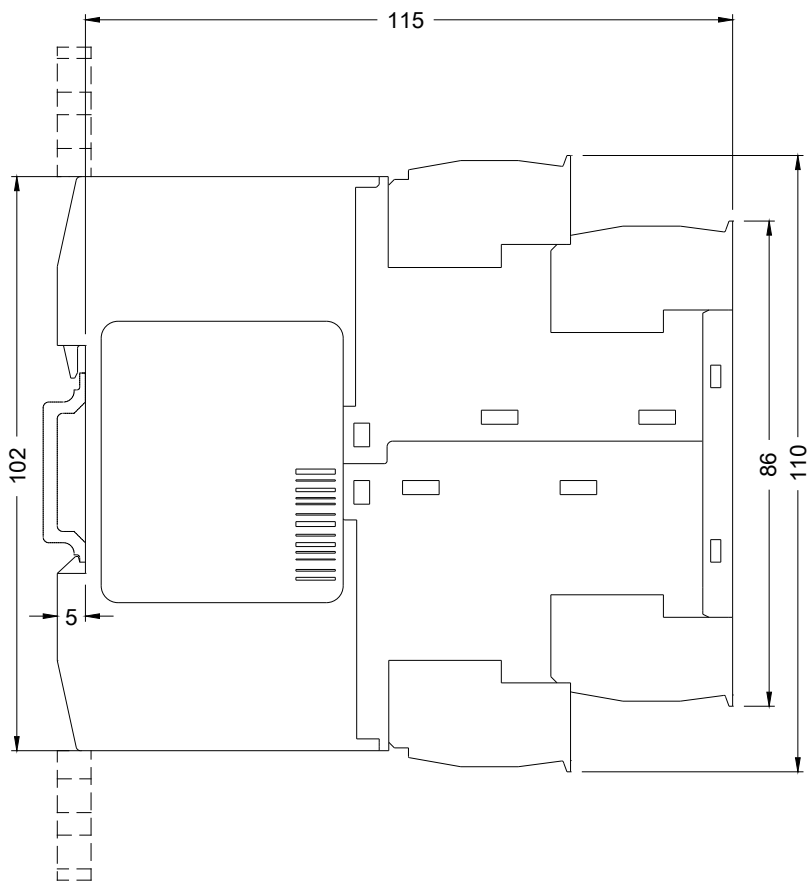
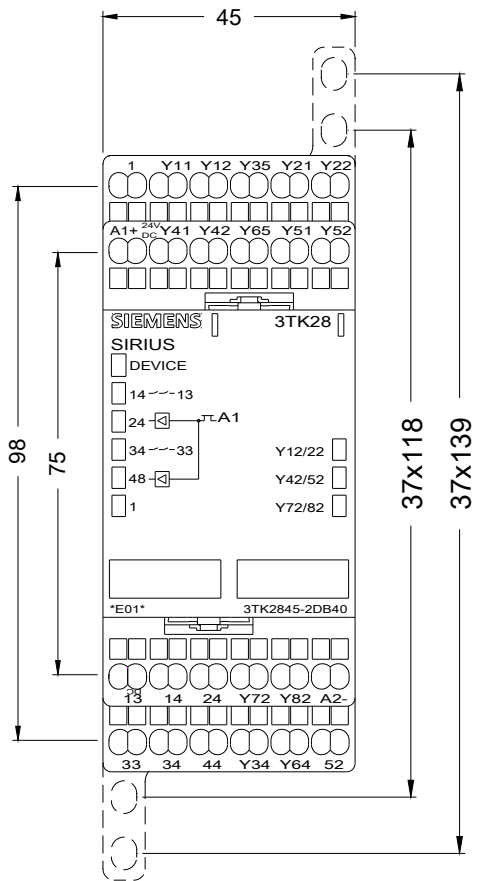
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK2845-2DB40>

**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

<https://support.industry.siemens.com/cs/ww/en/ps/3TK2845-2DB40>

**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3TK2845-2DB40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK2845-2DB40&lang=en)



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